

CLAIMS

What is claimed is:

1. A control system for an electrochromic device, comprising:
a light source that produces an input light signal;
an electrochromic window configured to attenuate the input light signal by a certain amount and transmit a resulting attenuated light signal;
an optical detector configured to detect an optical property of the attenuated light signal; and
a power module connected to the electrochromic window and the detector, wherein the power module generates a pulse-width modulated power signal and inputs the power signal to the electrochromic window, the power signal modulated by an amount based on the detected optical property of the attenuated light signal.
2. The control system of claim 1, wherein the light source is a laser device.
3. The control system of claim 1, wherein the input light signal digitally encodes information in one or more wavelength channels.
4. The control system of claim 2, wherein the laser device comprises a gas laser or a semiconductor laser.

5. The control system of claim 1, wherein the detector comprises a charge-coupled device array that measures the power of the light signal over a one-dimensional area or a two-dimensional area.

6. The control system of claim 1, wherein the power module comprises a pulse-width modulated circuit that controls the distribution of electricity from a power supply to the electrochromic window.

7. The control system of claim 6, wherein the pulse-width modulated circuit modulates voltage from the power supply such that a modulation rate of the voltage is faster than a total decay rate of the electrochromic window.

WORKMAN NYDEGGER
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

8. A method of controlling an electrochromic device, comprising:
providing a light source that produces an input light signal;
directing the input light signal to an electrochromic window configured to attenuate the light signal;
transmitting the attenuated light signal from the electrochromic window to an optical detector configured to detect an optical property of the attenuated light signal; and
directing a pulse-width modulated power signal to the electrochromic window, wherein the power signal is modulated by an amount based on the detected optical property of the attenuated light signal.
9. The method of claim 8, wherein the light source is a laser device.
10. The method of claim 8, wherein the input light signal digitally encodes information in one or more wavelength channels.
11. The method of claim 8, wherein the detector comprises a charge-coupled device array that measures the power of the light signal over a one-dimensional area or a two-dimensional area.
12. The method of claim 8, wherein the pulse-width modulated power signal has a modulation rate that is faster than a decay rate of the electrochromic window.

13. A control circuit for an electrochromic device, comprising:

- a substrate having an upper surface;
- a preamp integrated circuit on the upper surface of the substrate;
- an insulator on the upper surface of the substrate and adjacent to the preamp integrated circuit;
- one or more conductive posts electrically connected to the preamp integrated circuit;
- a first layer of a transparent material;
- a second layer of a transparent material; and
- an electrochromic window interposed between the first and second layers of the transparent material, wherein the electrochromic window is in electrical communication with the preamp integrated circuit.

14. The control circuit of claim 13, wherein the substrate comprises a transistor outline can.